Non-aversives

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proaches have been developed. However, the research project has generated numerous studies confirming that, for some individuals with violent or inappropriate behaviors, non-aversive techniques can be quite effective. While much of the research has been single-case or small-scale studies, it confirms that non-aversive procedures may successfully replace aversives even in some cases involving extreme aggression and self-injury.

Much of the research has involved "functional assessment," a procedure first used with autistic children by Ivar Lovaas in the 1960s and still the foundation of modern non-aversive treatments. This procedure involves gathering extensive information about an individual's environment in order to determine what triggers either appropriate or inappropriate behavior, what purpose inappropriate behavior serves, and what consequences result from it. Once the causes of a behavior are identified, trainers can a) teach the autistic individual an alternative behavior that accomplishes the same end more effectively (for instance, asking for a break instead of having a tantrum to get one), and/or b) modify the circumstances associated with the behavior (for instance, reducing the difficulty of a task that provokes aggression). While functional assessment is nothing new, Horner's group has refined the technique and created checklists and guidelines to assist parents and professionals in using it.

Research shows that functional assessment can be a powerful tool. A recent case study by Stella Dadson et al. involved a 17-year-old girl whose disruptive and sometimes violent behavior dropped from 60% of school periods to 5% of school periods when teachers were able to determine which events (lack of sleep, a late bus, etc.) upset her, and arrange appropriate interventions.

Other areas of research include:

Functional communication. Teaching autistic children to communicate their needs using speech, signing, tokens, picture books, or other methods can often alleviate behavior problems. For instance, Mark Durand reduced the self-injury and disruptive behaviors of three non-verbal children by teaching them to independently press keypads on a device that produces computer-generated phrases (e.g., "Would you help me with this, please?"). A key factor, researcher Duane Kemp notes, is that "the new response must be more efficient (access reinforcers with shorter delay, less effort, or greater efficiency) than the problem behavior."

Choice-making. Research shows that when autistic or retarded students have a greater say in their tasks and rewards, they perform better and exhibit fewer aberrant behaviors. For instance, a study by Dyer, Dunlap and Winterling compared teacher-selected to student-selected tasks and rewards, and found that "the choice-making condition consistently resulted in reduced levels of problem behavior."

Modifying tasks. Studies consistently demonstrate that developmentally disabled students learn better when new tasks are interspersed with tasks they already have mastered. Another effective approach is "errorless learning," which begins at a level the child already has mastered and very gradually increases the difficulty of a task (see related article on page 5). Students' problem behaviors also drop when a task is modified to make it more interesting or functional; for instance, Dunlap and colleagues reduced one girl's aggressive behavior during handwriting tasks by having her write captions for photos she had taken.

Self-monitoring. Several studies show that even low-functioning autistic children often can be taught to monitor their own behavior by using wrist counters or checklists. This technique often results in surprisingly quick drops in aberrant behavior.

Combined treatments. Researchers are reporting success in combining multiple approaches into one treatment program (see ARRI 7/1 for related article). A study by Kemp, for instance, details how the aggression and self-injury of three autistic adults at work was reduced by teaching them functional communication skills, allowing them to make more choices, "embedding" problem tasks (interspersing them with tasks not linked to problem behavior), teaching the workers to tolerate delays in reinforcement, and creating a rapport with the job coach by making her the source of reinforcers.

Intensive support. Some research focuses on providing intensive support services. Joseph Lucyshyn et al. recently reported on an autistic woman whose severe self-injury dropped (although restraints were still required at times) when she and a roommate were placed in an apartment with one-on-one staff support in the daytime and one-on-two staffing at night. In addition, the woman had a full-time job coach, and staff members and others involved her in many social activities.

Progress, but not perfection

While none of these approaches are radical breakthroughs, collectively they show significant promise in reducing severe behavior problems in a substantial percentage of autistic individuals. Many of the approaches are simple and easily implemented, even by untrained individuals. Most are more "natural" and easier to implement in public settings than aversive procedures. Furthermore, functional assessment and related non-aversive approaches are designed not just to treat symptoms, but to identify and correct the causes of severe behavior problems. On the downside, many non-aversive procedures require intensive staffing (e.g., full-time job coaches or live-in aides) and may be unrealistic in times when funding for programs for the disabled is limited.

Furthermore, while the research shows that non-aversive approaches are often effective, there is no evidence that they are ***always*** effective—a fact that hasn't changed since Horner's project began. While Donnellan, who supports a non-aversives-only approach, charges that aversives are "the last refuge of the incompetent," few other researchers claim that non-aversive approaches always work. And even when non-aversive techniques do work, they tend to work much more slowly than aversives—a shortcoming which can prove dangerous or even fatal in cases of severe self-injury.

Despite the less-than-universal effectiveness of non-aversive methods, a growing number of states (California is the latest) are banning the use of even mild aversives in classrooms. The International Association for the Right to Effective Treatment (IARET) believes such bans, while well-intentioned, are leading to over-medication of disruptive students, over-use of restraints, and a rise in serious injuries to teachers and caretakers. The group cites the case of an aggressive, self-injurious Connecticut man whose non-aversives-only program—designed by experts and costing approximately $1 million a year—led to 14 severe staff injuries (including broken bones, concussions, and torn ligaments), 32 moderate injuries, more than 700 minor injuries, and massive property damage. Similar stories about the failure of non-aversives to control severe behavior problems were offered by parents of autistic children on recent *Eye to Eye* and *Oprah Winfrey* shows.

In short, the impressive work of Horner et al. demonstrates the effectiveness of non-aversive techniques, but also defines their current limitations. It appears that the answer to the question, "do universally effective non-aversive treatments exist?," remains, "no"—but we're getting a bit closer.

References available upon request. Send SASE marked "non-aversives."

B6/seizure study

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say, comparably favorably with ACTH, the usual treatment for infantile seizures, which is often ineffective in the long run and can cause severe infections, heart damage, and other serious complications.

"Considering the possibility of effective treatment without serious complications and a therapeutic change within one to two weeks," the researchers say, "a controlled trial of initial vitamin B6 therapy for infantile spasms seems justified." In addition, Pietz and colleagues say, vitamin B6 has been proven helpful in West syndrome and other forms of childhood seizures.

Vitamin B6 is involved in the metabolism of amino acids, the building blocks of the brain's messenger chemicals. "The link seems plausible," the researchers say, "between a disturbed balance of inhibitory and excitatory neurotransmitters and the striking efficacy of high-dosage vitamin B6."

Editor's note: At least one third of autistic persons show seizure activity. The B6 dosage used in the above study, 300mg/kg/day, is 18 times the dosage used in treating autism. I have written to Dr. Pietz to call attention to the several studies showing that magnesium greatly enhances the effects of B6 in treating autism.

"Treatment of infantile spasms with high-dosage vitamin B6," J. Pietz, C. Benninger, H. Schafer, D. Sontheimer, G. Mittermaier, and D. Rating; *Epilepsia*, 43(4), 1993, pp. 757-763. Address: J. Pietz, Kinderklinik der Universitat Heidelberg, Im Neuenheimer Feld 150, D-6900 Heidelberg, Germany.